

**The Rejections Under  
35 U.S.C. § 102**

Claim 16 was rejected under 35 U.S.C. § 102(a) as being anticipated by Japanese Laid-Open Patent Appln. No. 10-258517<sup>1</sup> to Hideaki. Applicants respectfully traverse this rejection and submit the following argument in support thereof.

This rejection is not well-taken and must be withdrawn because Hideaki is not prior art as to the present application. The present application is a division of U.S. patent appln. no. 09/041,890, filed on March 12, 1998. Hideaki was published after this application's effective filing date, on September 29, 1998.

Accordingly, Hideaki is not prior art, and so this rejection cannot be maintained.

Favorable consideration and withdrawal of this rejection are respectfully requested.

**The Rejections Under  
35 U.S.C. § 103**

Claims 16 and 20-28 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,790,158 to Shinada et al. in view of Japanese Laid-Open Patent Appln. No. 7-164638 to Fuji Electric<sup>2</sup>. Applicants respectfully traverse this rejection and submit the following arguments in support thereof.

As described in claim 16, the present invention involves a method of manufacturing an ink cartridge having an ink supply port shaped to receive an ink supply needle, and an inlet formed in the container body, for use in an ink jet recorder. This is done by treating

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<sup>1</sup> Although Hideaki is identified at page 2 of the Office Action as JP410258517A, it should be noted that the Japanese reference itself bears publication no. 10-258517. Also, it is believed that the inventor's last name is actually Haigo.

<sup>2</sup> While the Office Action refers to JP0315660, that is the application number for this reference. The publication number for the document by which it should be identified is 7-164638.

at least a portion of the ink supply port inlet with ultraviolet radiation to improve the wettability of the treated portion.

It should be noted that claim 16 provides the ink supply port is shaped to receive an ink supply needle. Those skilled in the art will appreciate that, owing to this shape of the ink supply port, an air bubble is likely to remain in that portion during ink injection. Consequently, the application of ultraviolet radiation treatment to the ink supply port will be effective.

More specifically, it has been known that in some filling schemes, air bubbles nevertheless positively flow to the head. Here, however, air bubbles within the cartridge are positively eliminated during the ink filling procedure so that no such bubbles would flow to the head during use. This is not known in the art. Nowhere is it taught to provide hydrophilic properties on at least part of the inner surface of the ink supply port for the purpose of keeping the degassing rate constant in those cases where degassed ink is used, or keeping constant and uniform the amount of ink loaded into the cartridge.

Neither Fuji Electric nor Shinada suggests the application of ultraviolet radiation treatment to the ink supply port having a shape such that an air bubble is likely to remain therein, as is claimed.

Applicants' invention, as set out in claim 20, concerns a method of manufacturing an ink cartridge for use in an ink jet recorder. This involves providing a container body including a chamber for accommodating ink therein, and an ink supply port communicating with the chamber, sealing the ink supply port, bonding a cover to the opening of the container body, injecting ink into the chamber and depressurizing the ink cartridge a first time. The method also involves sealing a portion of the cover after the first depressurizing step and then depressurizing the ink cartridge a second time, and sealing the remainder of the cover after the second depressurizing step.

Applicants submit that Shinada does not even suggest the aspects of the claimed invention relating to sealing a portion of the cover after the first depressurizing step and sealing the remainder of the cover after that second depressurizing step.

As set out in claim 25, this invention also concerns a method of manufacturing an ink cartridge for use in an ink jet recorder. This is done by providing a container including a chamber for accommodating ink therein, and an ink supply port and an ink injection port, both communicating with the chamber, sealing the ink supply port with a gas permeable and moisture impermeable film, injecting ink into the chamber through the ink injection port, depressurizing the chamber, and sealing the ink injection port after depressurizing the chamber. Further steps include inserting the sealed container into a bag having an opening and sealing the opening of the bag in a vacuum environment.

Thus, with regard to claim 25, it should be understood that the ink supply port is sealed with gas permeable and moisture impermeable film. Since the ink supply port is sealed with the gas permeable film, the step of sealing the opening of the bag in a vacuum environment provides an effect of depressurizing the chamber via the gas permeable film.

Applicants submit that Shinada does not suggest depressurizing the chamber after injecting ink and before packing the container. This can be understood with reference to col. 6, lines 42-54, of Shinada.

For all the foregoing reasons the claimed invention is not suggested by the prior art. Accordingly, favorable reconsideration and withdrawal of this rejection is respectfully requested.

## **SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the reference listed on the enclosed Information Disclosure Statement by Applicant for (PTO/SB/08a). A copy of the listed reference is also enclosed.

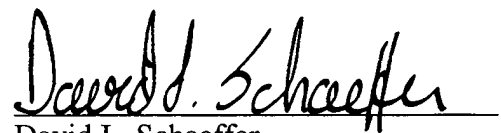
It is respectfully requested that the above information be considered by the Examiner and that a copy of the enclosed PTO/SB/08a form be returned indicating that such information has been considered.

This Supplemental Information Disclosure Statement is being filed in accordance with 37 C.F.R. § 1.97(c). The Commissioner is authorized to charge the requisite fee under 37 C.F.R. § 1.17(p) (\$180.00), as well as any other fee which may now or hereafter be due, to Deposit Account No. 19-4709.

### **CONCLUSION**

Applicants respectfully submit that this application is in condition for allowance. Early and favorable action is earnestly solicited.

Respectfully submitted,



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Att: "Version Marked To Show Changes Made"

**VERSION MARKED TO SHOW CHANGES MADE:**

Please add claims 30-34:

--30. (New) A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the steps of:

providing a container including a chamber for accommodating ink therein, and an ink injection port communicating with the chamber;

injecting ink into the chamber through the ink injection port;

thereafter depressurizing the chamber;

thereafter sealing the ink injection port; and

thereafter packing the container in a bag.

31. (New) The method of claim 30, wherein the step of injecting ink is executed under a depressurized condition.

32. (New) The method of claim 30, wherein the step of packing the container is executed under a depressurized condition.

33. (New) The method of claim 30, wherein the container further comprises an ink supply port, and wherein prior to the step of injecting ink, the ink supply port is sealed.

34. (New) The method of claim 33, wherein the ink supply port is sealed with a gas permeable and moisture impermeable film.--

Please amend claims 16, 20 and 25 as follows:

16. (Amended) A method of manufacturing an ink cartridge having an ink supply port shaped to receive an ink supply needle, having an inlet, formed in the container body, for use in an ink jet recorder, comprising the step of treating at least a portion of the ink supply port inlet with ultraviolet radiation to improve the wettability of the treated portion.

20. (Amended) A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the steps of:

providing a container body [having a first wall and a plurality of walls extending upwardly therefrom to define an opening spaced from the bottom wall on a pallet, the container body] including a chamber for accommodating [a porous member] ink therein, and an ink supply port communicating with the chamber[, having an inlet formed in the bottom surface of the chamber and an outlet];

[inserting a packing member into the ink supply port and then] sealing the ink supply port [outlet];

[inserting a porous member into the foam chamber;]

bonding a cover to the opening of the container body;

injecting ink into the [foam] chamber;

depressurizing the ink cartridge a first time;

sealing a portion of the cover after the first depressurizing step and then depressurizing the ink cartridge a second time; and

sealing the remainder of the cover after the second depressurizing step.

25. (Amended) A method of manufacturing an ink cartridge for use in an ink jet recorder, comprising the steps of:

providing a container [body having a first wall and a plurality of walls extending upwardly therefrom to define an opening spaced from the bottom wall on a pallet, the container body] including a [foam] chamber for accommodating [a porous member] ink therein, and an ink supply port[, having an inlet formed in the bottom surface of the foam chamber and an outlet] and an ink injection port, both communicating with the chamber;

[inserting packing into the ink supply port and then] sealing the ink supply port [outlet] with a gas permeable and moisture impermeable film;

[inserting a porous member into the foam chamber;

bonding a cover to the opening of the container body;]

injecting ink into the [foam] chamber through the ink injection port;

depressurizing the [ink cartridge] chamber;

sealing the [cover] ink injection port after depressurizing the [ink cartridge] chamber;

inserting the sealed container [body] into a bag having an opening; and

sealing the opening of the bag in a vacuum environment.